



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

A preliminary Revision of the Genus *Lathyrus* in North and Central America.

BY THEODORE G. WHITE.

The following is an attempt to correlate and classify the various descriptions and herbarium material of North American *Lathyri*. Much confusion has existed in the determination of specimens of this genus up to the present time, and evidently the species thus far defined are not sufficient to embrace all the material collected.

From the fact that each collection so far examined has afforded so many developments, we are certain that much interesting material awaits description. The present abstract is published in the hope of bringing forth additional material and notes from collectors in the field, especially in the West and Southwest, before the work is completed. Such information will be most gratefully received.

Only two attempts have previously been made to enumerate the species of the genus. The first was by Alefeld (*Bonplandia*, June, 1861), who placed all the American species in the genus *Orobis*; the second, by Watson (*Am. Jour. Sci.*, Feb., 1876), who enumerated thirteen species; while several additional species, chiefly by Prof. Greene and by Dr. Watson have since been published.

I am indebted to Prof. N. L. Britton for guidance throughout, and for the use of collections placed at my disposal by Columbia College, Harvard University, United States Department of Agriculture and the University of California, which have been examined as well as several private herbaria.

LATHYRUS L. Sp. Pl. 733 (1753).

Stem erect or climbing by mostly trifid tendrils; stipules variably semi-sagittate; leaves abruptly pinnate, of 1-7 pairs of leaflets; leaflets mucronate; peduncles axillary; the raceme shorter than, equalling or exceeding the leaves; corolla papilionaceous, campanulate at base and not funnel-form as in *Vicia*; wings free from or only slightly adherent to the middle of the keel, while those of *Vicia* are adherent; sheath of the filaments cylindrical and cut off abruptly at right angles, and not oblique at the apex; stamens

10, diadelphous; style transversely flattened, but not grooved down the back, as in *Pisum*, ascending and bent upward obtusely or nearly at right angles with the ovary, dilated at summit and longitudinally bearded on the inner face, next the free stamen, for $\frac{1}{3}$ – $\frac{1}{2}$ its length, *not* acute and bearded cylindrically at the tip as in *Vicia*, sometimes twisted so as to appear reversed, persistent; calyx campanulate, dilated, not funnel-form as in *Vicia*, 5-toothed; legumes oblong, compressed, 2-valved, 1-celled, many-ovuled; seeds globular or angular.

Artificial Key to the Species.

Leaflets a single pair.

- | | |
|---|--------------------------|
| Annual; racemes 1-2-flowered; flowers purple, | 1. <i>L. pusillus</i> . |
| Perennial; racemes 4-10-flowered; flowers yellow, | 2. <i>L. pratensis</i> . |

Leaflets 2-several pairs.

Stems winged.

- | | |
|--|--------------------------|
| Leaflets 3 pairs, glabrous or pubescent; racemes 2-6-flowered, | 3. <i>L. palustris</i> . |
| Leaflets 4-6-paired; pubescent; racemes 6-15-flowered, | 4. <i>L. Watsoni</i> . |
| Leaflets 4-6 pairs; glabrous, coriaceous; racemes 6-15-flowered, | 5. <i>L. Jepseni</i> . |

Stems wingless.

Plants glabrous, puberulent or pubescent, not villous.

Climbing by simple or 3-forked tendrils.

Stipules large, mostly half as large as adjacent leaflets.

Leaflets 2-5 (mostly 3) pairs.

- | | |
|------------------------|----------------------------|
| Flowers cream-colored, | 6. <i>L. ochroleucus</i> . |
| Flowers purple. | |

Racemes 2-6-flowered.

Leaflets membranaceous.

Flowers less than 1-5 cm. long, 7. *L. myrtifolius*

Flowers at least 2 cm. long, 8. *L. pauciflorus*.

Leaflets coriaceous, 19. *L. parvifolius*.

Racemes many-flowered, 9. *L. Bolanderi*.

Leaflets 5-7 pairs.

Flowers yellow, 10. *L. sulphureus*.

Flowers purple.

Raceme exceeding the rachis of its leaf,

11. *L. Alefeldi*.

Raceme not exceeding the rachis of its leaf.

Glabrous, flaccid, leaflets 5-8 pairs, 12. *L. polyphyllus*.

Glabrous, rigid, leaflets 4-6 pairs, 13. *L. maritimus*.

Pubescent; leaflets 5-7 pairs, 14. *L. vestitus*.

Stipules small or minute, not half as large as adjacent leaflet.

Flowers white, 15. *L. laetiflorus*.

Flowers purple, 2.5-3.5 cm. long.

- Stipules entire, 27. *L. decaphyllus*.
 Stipules incised or laciniate.
 Flowers 3-3.5 cm. long, 16. *L. splendens*.
 Flowers 2.5-3 cm. long, 10. *L. Alefeldi*.
 Flowers purple, less than 2 cm. long.
 Calyx-teeth nearly as long as the tube, 17. *L. violaceus*.
 Calyx-teeth shorter than the tube.
 Leaflets coriaceous.
 Leaflets linear-lanceolate, 18. *L. coriaceus*.
 Leaflets ovate, oval or oblong, 19. *L. parvifolius*.
 Leaflets membranaceous.
 Leaflets 5-7 pairs, broad, 20. *L. venosus*.
 Leaflets 2-4 pairs.
 Leaflets oblong or linear, 2-4 cm. long.
 Peduncle equaling or shorter than its leaf,
 7. *L. myrtifolius*.
 Peduncle much exceeding its leaf,
 21. *L. longipes*.
 Leaflets narrowly linear, 4-12 cm. long,
 22. *L. graminifolius*.
 Erect or nearly so; tendrils 0 or much reduced.
 Flowers 2 or more, white or yellowish.
 Flowers about 1 cm. long; leaflets mostly 2 pairs (rarely 3),
 23. *L. Arizonicus*.
 Flowers 2 cm. or more long.
 Leaflets narrowly lanceolate, much longer than wide,
 24. *L. Cusickii*.
 Leaflets oblong, lanceolate or obovate, 2-4 times as long as wide.
 Leaflets oblong or obovate; stipules minute,
 25. *L. obovatus*.
 Leaflets oblong-lanceolate; stipules nearly as large,
 26. *L. rigidus*.
 Flowers 2 or more, purple.
 Leaflets 3-7 pairs.
 Flowers 1.5-3 cm. long.
 Leaflets coriaceous.
 Leaflets 1-4 mm. wide, 27. *L. ornatus*.
 Leaflets 5-10 mm. wide, 28. *L. decaphyllus*.
 Leaflets membranaceous, 29. *L. Nuttallii*.
 Flowers 1-1.5 cm. long, 30. *L. Oregonensis*.
 Leaflets 1-2 pairs, 31. *L. bijugatus*.
 Single-flowered; flowers purple; leaflets 4-5 pairs,
 32. *L. Torreyi*.
 33. *L. littoralis*.
 Plant densely silky-villous all over,
1. *LATHYRUS PUSILLUS* Ell. Bot. S. C. & Ga. 2: 223 (1824).
Lathyrus Engelmannii Bisch. Sem. Hort. Heidel (1839).

South Carolina to Florida, west to Arkansas and Texas.

Original locality: Cooper River, St. John's Parish, S. C.

Resembles *L. angulatus* L. of Southern Europe, but that species has more nearly linear leaflets and smaller stipules.

2. *LATHYRUS PRATENSIS* L. Sp. Pl. 733 (1753).

Massachusetts and New York, naturalized from Europe.

Original locality: European.

3. *LATHYRUS PALUSTRIS* L. Sp. Pl. 733 (1853).

Lathyrus Lanzwertii Kell. Proc. Cal. Acad. 2: 150, fig. 44 (1863).

Lathyrus occidentalis Nutt. = *L. palustris* var. β , T. & G. Fl. N. A. 1: 276 (1838).

New York and New England westward through the Northern States and Canada to Alaska.

Original locality: European.

A species of Northern Europe, Asia and North America; characterized from various allied species, especially *L. myrtifolius* Muhl., with which it has been confused by American authors, by (1) the prominently winged stem, the wings often as broad or broader than the stem; (2) the longer narrower more coriaceous dark green foliage; (3) the more lanceolate acutely semi-sagittate stipules; (4) the few flowered raceme.*

4. *LATHYRUS WATSONI* White.

Lathyrus venosus Muhl. vars. γ and δ Torr. Pac. R. R. Rept. 4: 76 (1857).

Lathyrus venosus var. *Californicus* S. Wats. Proc. Am. Acad. 11: 133 (1876), not *L. Californicus* Dougl.

Lathyrus Californicus S. Wats. Proc. Am. Acad. 20: 363 (1885).

Perennial, rather lax, velvety pubescent throughout; stem very stout, flexuous, quadrangular, usually strongly winged, striate, branching, 1-2 m. high; stipules semi-sagittate, dilated and often coarsely toothed at base, long acuminate, the upper mostly narrower, $\frac{1}{3}$ - $\frac{1}{2}$ as long as the leaflets; pedicels often channeled; leaflets 8-12 sub-alternate, ovate-oblong to linear-lanceolate, 1-5 cm. long, obtuse to acuminate, rather thick, paler beneath, densely soft pubescent on both surfaces, as is also the rachis; tendrils

* Note distinction of characters of *L. palustris* and *L. myrtifolius* by Alefeld, Botanische Zeitung 18: 161 (May 4, 1860).

short, branching; peduncles stout, equalling the leaves, 6–15 flowered; flowers 13–18 mm. long, pink turning to yellow when old, calyx pubescent and much dilated, the upper pair of teeth very short, the lateral ones acuminate and longer, the lower lanceolate and nearly as long as the calyx-tube; legume linear, attenuate at base to a stipe, 5 cm. long by 3 cm. broad. Grows near water. May.

California, types from Monterey and from Sonoma Co., J. Torrey (1865).

Type in Gray Herb., dupl. in Herb. Col. Coll.

5. *LATHYRUS JEPSONII* Greene, *Pittonia*, 2: 158 (1890).

Lathyrus palustris L. var. *ε.*, T. & G. Fl. N. A. 1: 276 (1838).

California. Original locality: Suisan Marshes, Solano Co., W. L. Jepson (1890).

Type in Herb. Univ. Cal., duplicate in Herb. Col. Coll.

6. *LATHYRUS OCHROLEUCUS* Hook. Fl. Bor.-Am. 1: 159 (1831–33).

Lathyrus pisiformis Willd. var. (?) Richardson. Frankl. Exp. 2d Ed., App. 28 (1823).

Lathyrus glaucifolius Beck. Bot. 90 (1833).

Lathyrus albidus Aitkin; Eaton, Man. Ed. 6, 198 (1833).

Orobis ochroleucus A. Braun, Ind. Sem. h. Berol. (1853.)

New York and New Jersey, north and westward to Washington and British Columbia.

Original locality: Northern British America.

7. *LATHYRUS MYRTIFOLIUS* Muhl.; Willd. Sp. Pl. 3: 1091 (1803).

Lathyrus stipulaceus Le Conte; Torr. Cat. Pl. N. Y. 92 (1819).

Lathyrus Altiacus Ledeb. Fl. Altai. 3: 355 (1831).

Lathyrus decaphyllus var. *minor* Hook. and Arn. Bot. Beechey Exp. 138 (1841).

Orobis myrtifolius Alefeld, Bot. Zeit. 18: 162 (1860).

Manitoba and Ontario southward to Tennessee, east of the Mississippi.

Original locality: Pennsylvania.

- 7a. *LATHYRUS MYRTIFOLIUS MACRANTHUS* n. var.

Lathyrus palustris n T. & G. Fl. N. A. 1: 276 (1838–40).

Pubescent throughout; stem wingless, stouter, but more flexible than in the type; stipules broadly semi-sagittate, fully half the length of the leaflets, acuminate at both ends; leaflets elliptical, obtuse, 3–3.5 cm. long, $\frac{1}{3}$ as wide, very thin, pale green; racheme

exceeding the rachis of its leaf, 4-5-flowered; flowers large (2-2.5 cm. long); calyx-teeth linear-lanceolate or linear, very acute, the lateral ones equalling the tube, while the lower exceed it.

Original locality: Lubeck, Quoddy Head, Maine; (N. E. extremity of U. S.), Oakes.

Type in Herb. Col. Coll.

8. *LATHYRUS PAUCIFLORUS* Fernald, Bot. Gaz. 19: 335 (1894).

Lathyrus polyphyllus S. Wats. Bot. King's Exp. 78 (1871), not Nutt.

Lathyrus palustris var. *myrtifolius* S. Wats. Bibl. Index, 1: 230 (1878), in part.

Washington, Oregon, Utah [Wahsatch Mts., Watson (n. 296) L. F. Ward, etc.] and Idaho [Ketchum and Silver City, Miss A. I. Mulford (1894).]

Original localities: Roseburg, Oregon, Thos. Howell, 1887 (n. 677); Wawawai, Washington, Lake & Hull, 1892 (n. 810); Snake River Cañon, Washington, C. V. Piper, 1893 (n. 1487).

Types in Gray Herb.

9. *LATHYRUS BOLANDERI* S. Wats. Proc. Am. Acad. 20: 363 (1885).

Oregon and California.

Original locality: Oakland Hills near San Francisco, Torrey, 1865.

Type in Gray Herb.; duplicate in Herb. Col. Coll.

10. *LATHYRUS SULPHUREUS* Brewer; A. Gray, Proc. Am. Acad. 7: 399 (1867).

Lathyrus ochroleucus var. Torr. Pac. R. R. Rep. 4: 77 (1857).

Lathyrus venosus Torr. Pac. R. R. Rep. 4: 77 (1857), in part.

Washington, Oregon and California.

Original localities: Auburn, Duffield's Ranch, etc., Cal.

Types in Gray Herb. and Herb. Col. Coll.

11. *LATHYRUS ALEFELDI* White.

Orobis Californicus Alef. Bonplandia, 9: 146 (1861), excl. syn., not *Lathyrus Californicus* Dougl.

Perennial; glabrous or sparingly pubescent throughout; stem rather stout, flexuous, quadrangular, wingless, scarcely striate between the angles; stipules semi-cordate, acuminate, thick and strongly reticulated, $\frac{1}{3}$ - $\frac{1}{2}$ as long as the leaflets, and often nearly

as broad, the lower lobe very coarsely acuminate toothed, leaflets 6–10, alternate or in pairs, oblong to ovate or obovate, obtuse, frequently retuse, thick and stiff, prominently reticulated, glabrous on both surfaces, 1.5–4 cm. long, $\frac{1}{2}$ – $\frac{1}{3}$ as broad; tendrils long, stout and trifid; peduncle 6–10-flowered, twice as long as the corresponding leaf; flowers large 2–3 cm. long; corolla purple (?), pedicels longer than the calyx-tube, calyx dilated, pubescent, particularly on the margin; upper calyx-teeth broadly triangular, acute, lateral pair oblong-lanceolate, and the lowest coriaceous, subulate, the three lower teeth equalling the tube, the upper shorter; legume flat, sparingly pubescent, about 8-seeded. May.

California.

Original locality: San Diego, Cal., Geo. Thurber (n. 574), labeled "L. venosus Muhl."

Type in Herb. Col. Coll., duplicate in Gray Herb.

The species is readily distinguished by its wingless stem, large, coarsely toothed stipules; thick, broadly elliptical, glabrous, reticulate leaflets; very long, many-flowered peduncle and large flowers.

12. LATHYRUS POLYPHYLLUS Nutt.; T. & G. Fl. N. A. 1; 274 (1838).

Northern Pacific Coast and Manitoba.

Original locality: Oregon.

Type in Herb. Col. Coll.

13. LATHYRUS MARITIMUS (L.) Bigel. Fl. Bost. Ed. 2, 268 (1824).

Pisum maritimum L. Sp. Pl. 727 (1753).

Lathyrus Californicus Dougl.; Lindl. Bot. Reg. 14: t. 1144 (1828).

Orobis maritimus Reichenb. Fl. Exc. 538 (1830–32).

Lathyrus venosus Sweet, Brit. Fl. Gard. 1: t. 37 (1831), not of Muhl. nor Willd.

Lathyrus pisiformis Hook. Fl. Bor. Am. 1: 158 (1831–33).

Coasts of Labrador to New Jersey, shores of the Great Lakes, Washington and Alaska.

Original locality: European.

- 13a. LATHYRUS MARITIMUS ALEUTICUS Greene, ined.

Nearly erect, 12–30 cm. high; stems slender; stipules as in the type, as large or larger than the leaflets; stipules and leaflets

thin, pubescent on the lower surface, glabrous above; leaflets 2-5 pairs, thin and rotund or elliptical, not obovate as in the type, nearly always opposite, seldom over 1.5 cm. long, $\frac{1}{2}$ - $\frac{2}{3}$ as wide; tendrils usually reduced to a short bristle or rudimentary terminal leaflet. Calyx teeth very long and broad.

This is probably the low plant alluded to by Hooker, Fl. Bor. Am. 1: 159 under *L. pisiformis*. A fairly constant variety of the North Pacific coasts, Alaska, Japan, Kamtschatka, the Commander Islands, etc.

Original locality: Alaska.

Types in Herb. Univ. Cal.; duplicates in Herb. Col. Coll.

14. *LATHYRUS VESTITUS* Nutt.; Torr. & Gray, Fl. N. A. 1: 276 (1838).

Original locality: Oregon, "Columbia plains toward the sea," Nuttall.

Type in Herb. Col. Coll.

A large quantity of western material has been assigned to this species by collectors and authors, none of which has so far been found to agree with Nuttall's description or his own type specimen, in regard to the short peduncle, numerous small leaflets glabrous only on the upper surface, and the broad stipules of very nearly equal size with the leaflets.

15. *LATHYRUS LÆTIFLORUS* Greene, Erythea, 1: 105 (1893).

California, Los Angeles and Santa Clara Cos.

Type raised from seed from Los Angeles Co. Cal., in botanic garden of Univ. of Cal.

Type in Herb. Univ. Cal., duplicate in Herb. Col. Coll.

16. *LATHYRUS SPLENDENS* Kellogg, Proc. Cal. Acad. Sci. 7: 90 (1876).

Lathyrus venosus var. *grandiflorus* Torr. Pac. R. R. Rept. 77 (1857), not *L. grandiflorus* Sibth. & Smith.

Original locality: Southern California. (J. M. Hutchings).

California and Lower California.

17. *LATHYRUS VIOLACEUS* Greene, Erythea, 1: 105 (1893).

Lathyrus puberulus White; Greene, Man. 85 (1894).

Southern California.

Type of *L. violaceus* raised from seed from the mountains of Los Angeles Co., Cal.

Types of *L. violaceus* and *L. puberulus* in both Herb. Univ. Cal. and Herb. Col. Coll.

The author's provisional manuscript name of *L. puberulus* was adopted by Prof. Greene in his Man. Bot. Reg. San Francisco, before we had seen the type of *L. violaceus* Greene. Since then Prof. Greene has kindly furnished us with fresh specimens of what he considers both species. Except in the smaller size of the specimens of *violaceus* submitted, its serrated rather than entire stipules, its darker foliage and that the lower calyx teeth are usually more drawn into a sinus, we distinguish, however, no specific characters sufficient to make "*puberulus*" a distinct species from *violaceus*, in either our types or the fresh material so far examined.

17a. *LATHYRUS VIOLACEUS* BARBERÆ n. var.

A narrowly leaved plant resembling this species more closely than any of the other related western ones occurs in Southern California and Northern Lower California. The variety has slender, wingless, much branched, climbing or creeping stems, glabrous or somewhat pubescent throughout; stipules minute, semi-sagittate, acuminate, lanceolate; leaflets linear-lanceolate, somewhat obtuse, 1–5 cm. long, 1–3 mm. broad, 4 pairs, alternate; peduncle somewhat longer than the leaf, 6–15-flowered; flowers 2 cm. long, reddish-purple, the banner veined with purple, as in the species; upper calyx teeth exceeding the tube, lateral ones broader and about the length of the tube, the lowest broad and much shorter.

California, Santa Barbara (1893), Dr. Wheelock; Kellogg and Harford (1868–9); Northern Lower California (1893), Miss Fish; San Quentin Bay (1889), Dr. E. Palmer (no. 670).

The variety, if not the whole species, is probably the same as *Lathyrus strictus* Nutt.; Torr. and Gray, Fl. N. A. 1: 276, from the same region (San Diego), but we have not seen the type of the latter.

18. *LATHYRUS CORIACEUS* n. sp.

Lathyrus palustris S. Wats. Bot. King's Exp. 79 (1871), not L. Perennial; glabrous or minutely papillose throughout, 10–30 cm. high, stems rather stout, flexuous, quadrangular or terete, wingless, scarcely striate; stipules semi-sagittate, lanceolate, long-acuminate, in length up to half as long as the leaflets; leaflets 6–

12, sub-opposite, thick and coriaceous, strongly venulose on both surfaces, elliptical or linear-lanceolate, mostly obtuse, 3–6 cm. long, $\frac{1}{3}$ as broad; tendrils short, mostly unbranched; raceme shorter than the rachis of its leaf; flowers 3–10, clustered, probably purple, 1–1.5 cm. long; calyx teeth subequal, acute, shorter than the tube. Legume not seen.

A well marked species of the interior region, having the rigid appearance of *L. Jepsoni*, but wholly distinct from it. May–June.

Utah, Wahsatch Mts., alt. 5,000–7,000 ft. S. Watson (n. 297); Oregon, base of Stein's Mt. Thomas Howell, 1885.

Type (1) in Herb. Col. Coll.; (2) in Herb. U. S. Dept. Agric.

19. *LATHYRUS PARVIFOLIUS* S. Wats. Proc. Am. Acad. 17: 345 (1882).

Lathyrus venosus var. *obovatus* Torr. Pac. R. R. Rep. 4: 77 (1857), in part.

Throughout the region west of the Rocky Mountains, from Washington to Mexico.

Original locality: San Miguelito Mts., Mexico, Schaffner (n. 812); also Parry & Palmer (n. 197).

Types in Gray Herb.

20. *LATHYRUS VENOSUS* Muhl.; Wild. Sp. Pl. 3: 1092 (1803).

Lathyrus decaphyllus Hook. Fl. Bor. Am. 1: 159 (1833), not Pursh.

Lathyrus multiflorus Nutt.; T. & G. Fl. N. A. 1: 274 (1838).

Orobis venosus A. Braun, Ind. Sem. h. Berol. (1853).

Lathyrus ochroleucus Torr. Pac. R. R. Rep. 267 (1858), not of Hook.

Orobis Muhlenbergii Alefeld, Bonplandia, 9: 146 (1861).

Throughout the eastern half of the United States and Canada.

Original locality: Pennsylvania.

21. *LATHYRUS LONGIPES* n. sp.

Lathyrus venosus Hemsley, Bot. Cent. Amer. 1: 293 (1879–1888), not Muhl.

Glabrous throughout; stems weak and slender, terete or quadrangular, wingless, not striate; stipules broadly semi-sagittate, acute at each end, thin, nearly entire, in length up to half the size of the leaflets; leaflets mostly three pairs, opposite, broadly elliptical, obtuse at each end, membranaceous, 2–4 cm. long, $\frac{1}{2}$ – $\frac{1}{3}$ as broad; tendrils long, filiform, branching; raceme 2–3 times longer

than the rachis of its leaf, 4-6-flowered, slender; flowers purple, scarcely over 1.5 cm. long, clustered at the end of the peduncle; pedicels shorter than the calyx-tube; calyx teeth acute, the three lower of about the same length, the upper pair much shorter and forming a sinus, all less than half the length of the tube. Legume not seen.

An apparently distinct species, although we have seen but one specimen.

Sierra Pedro Nolasco, Talea, etc. Mexico. C. Jurgensen (n. 817).
Type in Herb. Col. Coll.; communicated by Lindley.

22. *LATHYRUS GRAMINIFOLIUS* (S. Wats.) White.

Orob. dissitifolius Alefeld, Bonplandia, 9: 145 (1861), excl. syn. not *L. dissitifolius* Nutt.

Lathyrus palustris var. *angustifolius* S. Wats. Biblio. Index, 1: 230 (1878), not *L. angustifolius* Martr.

Lathyrus palustris var. *graminifolius* S. Wats. Proc. Am. Acad. 23: 263 (1888).

Perennial, glabrous or sparingly pubescent throughout; stem rather slender, quadrangular, or terete, wingless, scarcely striate, branching, 15-60 cm. high; stipules minute, narrowly semi-sagittate, the lower lobe very short, entire, 0.5-1. cm. long; leaflets 4-8, scattered, 4-12 cm. long, linear 2-3 mm. broad; peduncles about the length of the leaves, 2-10-flowered; flowers loosely racemose, small, about 1 cm. long; corolla purplish, white with pink or yellow vexillum, variable in size and shade of color; calyx-teeth subequal, much shorter than the tube, triangular-acuminate, the lower forming a large, rounded sinus; legume compressed, 10-14-seeded. August.

Mexico, New Mexico, Arizona, California.

Original locality: Sonora, Mexico, Thurber (n. 1016).

Authentic specimen in Herb. Col. Coll.

23. *LATHYRUS ARIZONICUS* Britton; Trans. N. Y. Acad. Sci. 8: 65 (1889).

Lathyrus palustris L. var. δ . T. & G. Fl. N. A. 1: 276 (1838).

Arizona, Colorado.

A form from the mountain region of Colorado, Veta Pass, Sangre de Christo Range, G. H. Hicks (n. 19); North Pine, C. S. Sheldon (n. 104), has three pairs of leaflets, as well as two, white flowers and is otherwise apparently closely related to this species.

Original locality : Mehren's Ranch, Mogollon Mts. (1887), E. A. Mearns.

Type in Herb. Col. Coll.

24. *LATHYRUS CUSICKII* S. Wats. Proc. Am. Acad. 17 : 371 (1882).
Oregon and Arizona.

Original locality : Union Co., Oregon (1880), W. C. Cusick (n. 193).

Type in Gray Herb., duplicate in Herb. U. S. Dept. Agric.

25. *LATHYRUS OBOVATUS* (Torrey).

Lathyrus venosus var. *obovatus* Torr. Pac. R. R. Rep. 4 : 77 (1857), in part.

Lathyrus polymorphus var. 1. Hook. Lond. Journ. Bot. 6 : 207 (1847).

Vicia nana Kell. Proc. Cal. Acad. 7 : 89 (1876).

Lathyrus Nevadensis S. Wats. Proc. Am. Acad. 11 : 133 (1876).
Washington to California.

Original locality : Mammoth Grove and Duffield's Ranch, Sierra Nevada, Cal. (1853-54), Bigelow.

Type in Herb. Col. Coll., duplicate in Gray Herb. Type of *L. Nevadensis* in Gray Herb.

- 25a. *LATHYRUS OBOVATUS STIPULACEUS* n. var.

Glabrous, stipules broadly sub-cordate, ovate, obtuse, $\frac{1}{3}$ - $\frac{1}{2}$ the size of the leaflets; lower lobe dentate; raceme sometimes 10-flowered.

Colville to Spokane, Washington, Wilkes' Expedition (n. 592);
Nachaco Valley (1877), Dawson.

- 26 *LATHYRUS RIGIDUS* White.

Lathyrus albus S. Wats. Bot. Cal. 2 : 442 (1880), not Kittel,
Flora Deutschland.

Oregon.

Original locality : Union Co., Ore., W. C. Cusick.

Type in Gray Herb., dupl. in Herb. U. S. Dept. Agric.

27. *LATHYRUS ORNATUS* Nutt.; T. & G. Fl. N. A. 1 : 277 (1838).

Lathyrus polymorphus Torr. Ann. Lyc. N. Y. 2 : 180 (1827),
not Nutt.

Wyoming, S. Dakota, Nebraska, Kansas, Indian Territory,
Colorado and Utah.

Original locality: Kamassa prairies.

Type in Herb. Col. Coll.

28. LATHYRUS DECAPHYLLUS Pursh, Fl. Am. Sept. 471 (1814).

Vicia stipulacea Pursh, Fl. Am. Sept. 739 (1814).

Lathyrus polymorphus Nutt. Genera, 2: 96 (1818).

Lathyrus myrtifolius Spreng. Syst. 3: 264 (1826), not of Willd.

Orobis polymorphus Alefeld, Bonplandia, 9: 146 (1861).

Idaho, Colorado, Arizona and New Mexico.

Original locality: Banks of the Missouri River.

This species is very close to *L. ornatus* and differs from it chiefly in the size of the plant and its leaflets and in geographic distribution. Intermediate forms occur.

29. LATHYRUS NUTTALLII S. Wats.; Proc. Am. Acad. 21: 450 (1886).

Lathyrus venosus Muhl., var. δ , T. & G. Fl. N. A. 1: 274 (1838).

British Columbia, Washington, Oregon, California.

Original locality: "Upper California," Nuttall.

Type in Herb. Col. Coll. Duplicate in Gray Herb.

This species is very close in general appearance to *L. obovatus* but the distinction has been drawn on its being somewhat stouter, the leaflets narrower, and usually 4 pairs instead of 3 pairs, flowers smaller and purple instead of ochroleucous, and rachis tendrill-bearing. Both species were formerly referred to the Eastern *venosus*, which, however, so far as I know, does not occur west of the Rocky Mountains.

30. LATHYRUS OREGONENSIS n. sp.

Sparingly pubescent throughout, erect, 20–40 cm. high, flexuous, stem terete or quadrangular, wingless, rigid; stipules narrowly semi-saggitate or semi-hastate, acuminate at each end entire, the lower lobe often quite short, $\frac{1}{3}$ – $\frac{1}{4}$ the length of the adjacent leaflets; leaflets mostly 4–7 pairs, opposite, lanceolate, obtuse, 1.5–4.5 cm. long, 2–8 mm. broad, coriaceous, sparingly pubescent on both surfaces; tendrils short, branched or reduced to a bristle; raceme 3–8-flowered, shorter than the rachis of its leaf; flowers apparently purple and veined, 1–1.5 cm. long; pedicel about the length of the calyx-tube; calyx-teeth subequal, the upper slightly shorter, all shorter than the tube; calyx-tube dilated, pubescent, purplish at base; legume compressed, abruptly ter-

minated at apex, short-stipitate within the calyx, brown, 4–5 cm. long, $\frac{1}{4}$ as broad, 4–6-seeded; seeds brown, orbicular. April–June.

Oregon, at 3,000–4,000 ft. altitude, W. C. Cusick (1886), n. 1372; Falcon Valley, Washington, low dry grounds, W. N. Suksdorf (1885).

Types in Herb. U. S. Dept. Agric.

31. *LATHYRUS BIJUGATUS* n. sp.

Erect or slightly decumbent, 2–3 cm. high, glabrous throughout; stems slender, wingless, round or quadrangular, slightly flexuous; stipules minute, linear, subulate, semi-sagittate; leaflets 2 pairs, sometimes only 1 pair, elliptical to obovate, obtuse, thin, paler green beneath, 2–5 cm. long, $\frac{1}{8}$ – $\frac{1}{3}$ as broad; tendrils none or reduced to a very short bristle; raceme two-flowered, about the length of the rachis of its leaf; flowers purplish, about 1 cm. long, calyx-teeth very short, triangular, subequal, much shorter than the tube; legume brown, compressed, about 6-seeded. June.

Idaho, Latuh Co., J. H. Sandberg, 1892; Washington, between Colville and Spokane, Wilkes' Exp. (n. 572).

Type (1) in Herb. Col. Coll.; (2) in Herb. U. S. Dept. Agric.

31a. *LATHYRUS BIJUGATUS* SANDBERGI n. var.

Leaflets linear-lanceolate or spatulate, 5–9 cm. long, 1–2 mm. wide. Resembles extremely closely *L. tenuifolius* Roth, a species of the Mediterranean region.

Latuh Co., Idaho, J. H. Sandberg, 1892.

Type in Herb. Col. Coll.

32. *LATHYRUS TORREYI* A. Gray, Proc. Am. Acad. 7: 337 (1868.)

Lathyrus villosus Torr., Stevens' Pac. R. R. Rept. 4: 54 (1859), name only, not of Frivalds.

Washington, Oregon and California.

Original locality: Humboldt Co., Cal., Bolander (n. 6506) 1866.

Type in Herb. Col. Coll.

33. *LATHYRUS LITTORALIS* Endl. in Walp. Rep. 1: 722 (1842).

Astrophia littoralis Nutt.; T. & G. Fl. N. A. 1: 278 (1838).

Orobis littoralis A. Gray; Stevens' Pac. R. R. Rept. 4: 54 (1859).

Washington, Oregon and California.

Original locality: Oregon.

Types of *Astrophia littoralis* and *Orobis littoralis* in Herb. Col. Coll.

LATHYRUS MEXICANUS Schl. Linnæa, 12: Litb. 85 (1838).

"*L. glaucescens*, cirrhis diphyllis, foliolis lineari-lanceolatis oblongisve obtusis mucronatis trinerviis, pedunculis unifloris, folio longioribus, leguminibus compressis polyspermis. In tepid. 2. Accepimus semen cum adnotatione: '*Lathyri* species e Mexico.' Flores amœne purpurei, magnitudine *L. odorati*. Vereor tamen, ne *L. tingitanus*, cultura mutatus sit."—Schlechtendal.

"South Mexico, valley of Mexico (Bourgeau, 85) Herb. Kew. This is probably *L. tingitanus* L., an Old World species now widely diffused as an escape from cultivation."—Hemsley, Bot. Cent. Amer. 1: 293.

Type not seen by the writer.

LATHYRUS CINCTUS S. Wats. Proc. Am. Acad. 23: 263 (1888) is *Vicia gigantea* Hook. Fl. Bor. Am. 1: 157 (1830) as noted on type specimens in Gray Herb.

A new fossil Hepatic from the Lower Yellowstone in Montana.

BY F. H. KNOWLTON.

[PLATE 219.]

PREISSITES WARDII n. gen. et sp.

Thallus large, from 8–15 mm. long, and about 6 mm. broad, entire, or more commonly once or twice forked, provided with a distinct midrib which forks with the forking of the thallus, and along the sides of which are numerous vein-like lines caused by the overlapping scales of the lower surface; fruit unknown.

Hepaticæ in a fossil state are exceedingly rare, and the species here described represents, so far as I am now aware, the only extinct form known from North America. According to Mr. Arthur Hollick, of Columbia College, beautifully preserved specimens of the living *Marchantia polymorpha*, have been found in calcarious tufa, but there is every reason to suppose that they are of very recent origin.

In Europe, outside of a dozen more or less doubtful species of Jungermanniaceæ preserved in the Baltic amber, only six fossil species appear to have been thus far described: *Marchantia Sezanensis* Sap.,¹ closely allied to the living *M. polymorpha* L.,

¹ Fl. Foss. de Sez. 308, pl. 1, figs. 1–8.